

A Plant Community Classification for Kootenai National Forest Peatlands

Prepared for:

The Kootenai National Forest

By:

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ABSTRACT

A vegetation classification and key was developed for the Kootenai National Forest (KNF) based on a dataset of 141 plots from this study and earlier work. The dataset included species cover and composition for vascular plants and bryophytes and ground water chemistry values for pH and electrical conductivity. Several plots were eliminated because they weren't peatlands or had invasive species. No forested peatland types were sampled. The dataset was analyzed with indirect ordination, agglomerative cluster analysis, and multi-response permutation procedure. Vegetation types were based on the National Vegetation Classification System (NVCS). Seventeen plant associations were recognized and described in a format currently compatible with the NVCS.

Peatlands were sampled across a continuum from poor to extreme-rich fens. The bryophyte component (mosses and liverworts) showed a strong response to this water chemistry gradient and was used to differentiate between plant associations indicative of poor and rich fens. Many KNF peatland types are similar to those recognized in a

regional peatland study Chadde et al. (1998), although some distinctions and refinements were noted. Except for forested peatlands, nearly the complete range of Northern Rocky Mountain peatlands is represented on the KNF. Additionally, KNF peatlands include some vegetation associations that are very similar to those recognized in Continental Canada and are also analogous to peatland types described elsewhere in North America and Northern Europe.

KNF peatlands support a considerable number of sensitive plant species and express a high degree of beta diversity. Species sampled from KNF peatlands included 17 "species of concern" (having a Montana Natural Heritage S-rank of 1 or 2) or "species of potential concern" (having S-rank of 3 or SU for unknown rank). We identified 40 vascular plant species undocumented in previously published work on peatland species in Montana. Of the 56 bryophyte species identified in the course of this study, five are considered rare in the state (S-rank of 1 or 2).

ACKNOWLEDGEMENTS

We are grateful to Toby Spribille for providing us with his dataset regarding samples of Kootenai National Forest (KNF) peatlands; he also shared a draft paper describing plant associations for the KNF using the Braun-Blanquet methodology. We acknowledge that our classification retains several of Toby's insights regarding KNF peatland ecology and classification of individual relevés.

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